

Information Technology Services Division (ITSD)

HB 5 - APPROPRIATING MONEY FOR
CAPITAL PROJECTS
Enterprise Systems Services Centers

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Contrasting the ESSC Proposal with the Supercomputer Proposal

ESSC

- Facility focus
- Production orientation
 - Hundreds of computer runs daily
 - Reliability of processing cycle critical
- Transaction processing with changing data
- "Affecting people' lives right now"

Supercomputer

- Machine focus
- Research orientation
 - Small number of research computer runs
 - Each can take several days
- Analysis/modeling of point-in-time data
- "Understanding how to make a better future"

Before we get started...



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Topics

- ESSC definition
- Services provided from the Mitchell Bldg.
- Challenges posed by the physical building
- Proposal goals
- ESSC highlights and characteristics
- Proposal Estimates



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What is an Enterprise Systems Services Center (ESSC)?

- Includes three key infrastructure areas:
 - Data Center
 - Network Operations Center
 - Voice Operations Center
- Enterprise services are available to the full breadth of State government
 - All three branches of State government
 - Partnering with Montana University System
 - Other units of government



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Mitchell Bldg Quick Profile: ITSD Data Center

- Mainframe and mid-tier services
 - IBM mainframe
 - Over 500 mid-tier computers (Unix, Windows & Linux servers)
- Over 66 Terabytes of agency data
- About 6000 sqf of computer room space
- High volume print services
- Enterprise applications – ex: e-mail, SABHRS
- Agency services – ex: application hosting, Central Imaging
 - Agreements with 26 “agencies”, MUS & local gov’t



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Mitchell Bldg Quick Profile: Network Management

- State Capital Complex high-speed campus network
- Primary entry point for statewide network vendors
- Primary State Internet connection
- Network security facilities
- Primary resource for all network device configurations across Montana (nearly 500 sites)
- Interactive Video Conferencing services



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Mitchell Bldg Quick Profile: Voice Services

- Provides the “central office” for 8,000 telephones in Helena area
- Provides voice mail services
- Provides “interactive voice response” connections for self-service applications
- Provides voice conferencing services
- Handles all long distance calling for State.



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Mitchell Building History

- Mitchell Bldg. houses Enterprise IT services and ITSD staff
- West and center wings built in 1948
- East wing built in mid-1960's
- Designed as a general office building
 - 14 external doors
 - Electrical service/wiring outdated
 - Floor-ceiling height and support columns limit how space can be used
- Data/Network/Voice Centers were an afterthought



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Mitchell Building Challenges

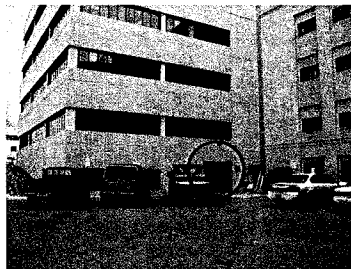
- Difficult to secure
- Electronics-hostile building design
- Vulnerable to terrorism/natural disasters
- Space limitations



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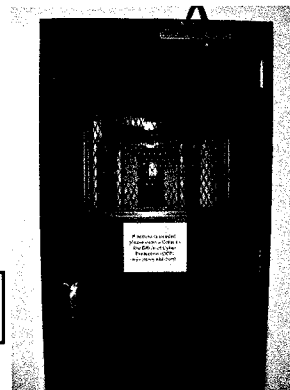


Difficult to Secure



Exterior access to
secured areas

Securing work area
required blocking
main building corridor



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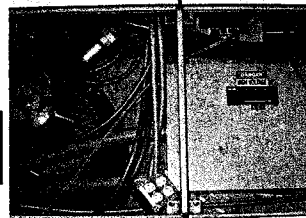


Electronics-Hostile

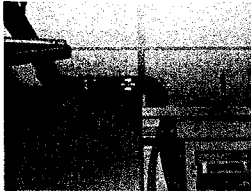


Water pipes next to electronic equipment

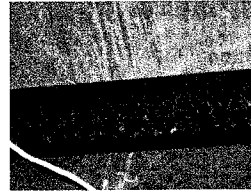
Water sump pump next to high voltage box



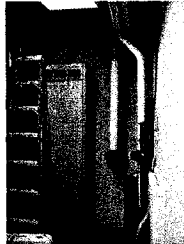
Pipes exposed next to electronic gear



Rusted supply line over raised floor



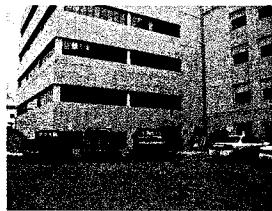
Main bldg power & water services adjacent each other



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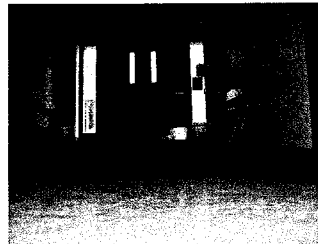


Vulnerable to Terrorism & Natural Disasters



Vulnerable to drive-up

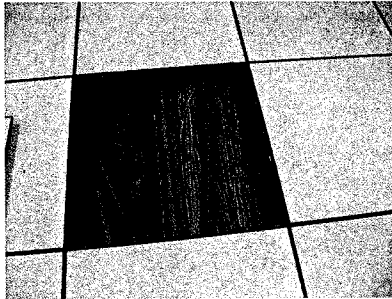
12" below ground level



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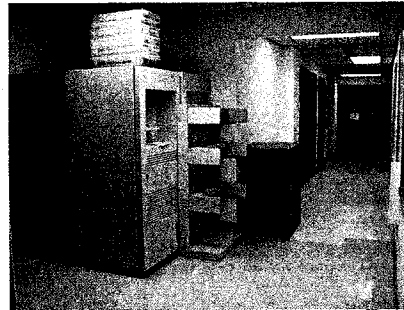


Space Limitations



Limited to 8" raised floor, raceways full

Using non-secure corridor for storage



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Mitchell Bldg. Problem Mitigation Efforts

- Security
 - Card key locks
 - Exterior doors locked off-hours
- Water
 - Water sensors and sump pumps under raised floor
- Electrical
 - 2002 electrical engineering study
 - Generator system - \$900,000
 - Ground system and surge protectors
 - 2006 electrical engineering study in wake of outages
 - Grounding recommendations
 - Transformer and panel upgrade recommendations



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Mitchell Bldg. Problems We Can't Fix

- Security
 - Proximity to streets & parking
 - Building access/control
 - Lack of floor to ceiling solid walls
- Water
 - East wing 12" below grade
 - Plumbing runs
- Building vulnerabilities
 - Seismic concerns
- Space
 - Layout limits use of space
 - No room for expansion

No suitable space
available in Helena



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Ensuring Continuity of Government

- Disaster Recovery shortcomings
 - D/R process is **far too slow** to support critical services
 - Always lagging behind the changing production requirements and costly
- Adopt Continuous Operations (COOP) approach
 - Two sites with different risk factors (e.g.: seismic) & equipped to handle critical systems load
 - High-speed communications between sites
 - Standard hardware to assure critical applications can run at either site
 - Critical data replicated at both sites to assure critical applications run with minimal interruption in service

*Improved Continuity of Operations (COOP) and
better value for our dollars*



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Agency “Data Centers”

- Numerous “data centers” throughout State government
 - About 15 “data centers” in Helena area
 - About 16,000 sqf (2004 report)
 - Wide range of security, Continuity Of Operations (COOP) situations
 - New investments being critically examined



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Support for New Facilities

- Risk Assessment
 - 2002 Titan Systems
 - 2006 CO National Guard
- Data Center Audit (2005)
- Legislative Audit Committee tour
- Governor’s Priority List



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The ESSC proposal has four objectives

1. To provide security that protects Montana data, hardware, and software to the level of industry best practices and the requirements established by Federal agency partners.
2. To provide near non-stop operation of critical applications through redundant services centers, redundant computers, and replicated data.
3. To accommodate the data center computing facility needs of other agencies quickly and with minimal cost.
4. To maximize the State's benefit from its disaster recovery/COOP investments.



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ESSC Highlights



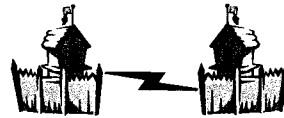
- Two facilities
 - Helena ESSC with offices for ITSD and other agencies' technical staff using the ESSC data center
 - Eastern Montana ESSC
 - Shared production load – with high speed communications between sites
- Designed for security
- Sized and equipped to handle critical load



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ESSC Highlights (cont.)



- Redundancy for critical applications
 - Communications/Computing capacity/Application Data
 - Statewide Voter Registration System pilot in 2006
- Revised approach to Disaster Recovery and COOP
- Accommodate capacity requirements of agencies currently running separate data centers



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Agency Participation

- Supports two approaches to co-locating in ESSC
 - “**Centralization**”: shared physical facility and services; agency ownership and support of their infrastructure to achieve greater efficiency while retaining agency control of equipment
 - “**Consolidation**”: integration of agency workloads onto shared ITSD infrastructure for maximized efficiency
- Upon passage, work with agencies to develop an ESSC migration plan
 - Paced to assure stability of service



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Cost Estimate

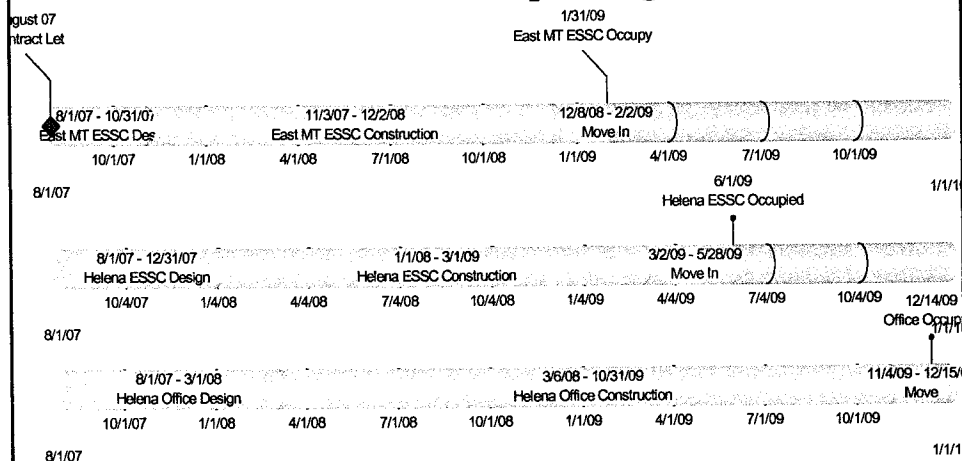
	Initial Cost	Recurring Cost
Helena ESSC & Office Design/Construct	\$18,850,000	
Eastern MT ESSC Design/Construct	\$2,250,000	
High Capacity Telecommunication Links	\$500,000	\$180,000
Hardware & Software (High Availability)	\$1,750,000	\$350,000
Furnishings & Moving Expense	\$800,000	
Total	\$24,150,000	\$530,000



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Milestones & Occupancy Timeline



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Other States/Due Diligence

- Kansas
 - Two centers (Primary and “hot backup”)
 - External D/R for mainframe only
- Oregon
 - Consolidation of 12 agencies into a new data/network center
- NASCIO (National Association of State CIOs)
- NASTD (National Association of State Technology Directors)
- Uptime Institute
 - Member based – major companies that have built centers
 - Best practices based on real-world experience
 - Tiers describe complexity of business requirements (Tiers I-IV)



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Thank You

- We appreciate your consideration of this major project



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 - Mike Boyer Asst. Admin Opns x3279



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